NOAA SHIP OSCAR DYSON
SOW Paragraph 1
Vertical Location of Draft Marks in Meters Above Baseline
Frame 5 Draft Marks

Draft Mark Measurements Vertical Height Above the Baseline in Meters						
Draft Mark Marking	Frame 5					
	Port Measurement (m)	Difference (mm)	Difference (in)	Stbd Measurement (m)	Difference (mm)	Difference (in)
3.0 meters	2.995	-5	-0.197	3.000	0	0.000
3.2 meters	3.192	-8	-0.315	3.193	-7	-0.276
3.4 meters	3.392	-8	-0.315	3.391	-9	-0.354
3.6 meters	3.590	-10	-0.394	3.582	-18	-0.709
3.8 meters	3.790	-10	-0.394	3.787	-13	-0.512
4.0 meters	3.992	-8	-0.315	3.989	-11	-0.433
4.2 meters	4.192	-8	-0.315	4.182	-18	-0.709
4.4 meters	4.392*	-8	-0.315	4.382*	-18	-0.709
4.6 meters	4.592*	-8	-0.315	4.582*	-18	-0.709
4.8 meters	4.792*	-8	-0.315	4.782*	-18	-0.709
5.0 meters	4.992*	-8	-0.315	4.982*	-18	-0.709
5.2 meters	5.192*	-8	-0.315	5.182*	-18	-0.709
5.4 meters	5.392*	-8	-0.315	5.382*	-18	-0.709
5.6 meters	5.592*	-8	-0.315	5.582*	-18	-0.709
5.8 meters	5.792*	-8	-0.315	5.782*	-18	-0.709
6.0 meters	5.992*	-8	-0.315	5.982*	-18	-0.709
6.2 meters	6.192*	-8	-0.315	6.182*	-18	-0.709
6.4 meters	6.392*	-8	-0.315	6.382*	-18	-0.709
6.6 meters	6.592*	-8	-0.315	6.582*	-18	-0.709
6.8 meters	6.792*	-8	-0.315	6.782*	-18	-0.709
7.0 meters	6.992*	-8	-0.315	6.982*	-18	-0.709

NOTE 1: The Statement of Work states: "...ship's baseline is identified...as horizontal plane which passes through the keel knuckle located 11,295 mm (37'-0 11/16") forward of the aft end of the main deck (just aft of Frame 82)." Draft marks were measured from ship's baseline to bottom of draft mark on ship's hull. Ship's keel rakes upward from the point where baseline passes through the keel knuckle. Because of this, ship's draft marks do not indicate true depth to keel (i.e., navigational draft) with the difference being greatest at the bow. At Frame 5, the difference between the keel and baseline is 1314mm (4' 3 3/4"). It is also noted that the keel does not rake upward at a constant slope (see SOW Paragraph 3).

NOTE 2: *In this area of of the hull, laser scan density was sparse making exact measurements difficult. (See Photo No. 3 in Enclosure (4).) However, based on a vertical measurement grid superimposed over the laser scan point cloud and indexed to an accurate draft mark measurement, these draft mark heights can be assumed to be correct.

NOTE 3: Due to drydock sidewall distance-to-hull constriants, midship draft mark heights were extrapolated based on the first three draft marks. (See Photo No. 4 in Enclosure (4) and discussion in Enclosure (3).)

NOAA SHIP OSCAR DYSON
SOW Paragraph 1
Vertical Location of Draft Marks in Meters Above Baseline
Frame 48 Draft Marks

Draft Mark Measurements Vertical Height Above the Baseline in Meters						
Draft Mark Marking	Frame 48					
	Port Measurement (m)	Difference (mm)	Difference (in)	Stbd Measurement (m)	Difference (mm)	Difference (in)
3.0 meters	3.011	11	0.433	3.010	10	0.394
3.2 meters	3.200	0	0.000	3.206	6	0.236
3.4 meters	3.392	-8	-0.315	3.406	6	0.236
3.6 meters	3.592	-8	-0.315	3.606	6	0.236
3.8 meters	3.792	-8	-0.315	3.806	6	0.236
4.0 meters	3.992	-8	-0.315	4.006	6	0.236
4.2 meters	4.192	-8	-0.315	4.206	6	0.236
4.4 meters	4.392	-8	-0.315	4.406	6	0.236
4.6 meters	4.592	-8	-0.315	4.606	6	0.236
4.8 meters	4.792	-8	-0.315	4.806	6	0.236
5.0 meters	4.992	-8	-0.315	5.006	6	0.236
5.2 meters	5.192	-8	-0.315	5.206	6	0.236
5.4 meters	5.392	-8	-0.315	5.406	6	0.236
5.6 meters	5.592	-8	-0.315	5.606	6	0.236
5.8 meters	5.792	-8	-0.315	5.806	6	0.236
6.0 meters	5.992	-8	-0.315	6.006	6	0.236
6.2 meters	6.192	-8	-0.315	6.206	6	0.236
6.4 meters	6.392	-8	-0.315	6.406	6	0.236
6.6 meters	6.592	-8	-0.315	6.606	6	0.236
6.8 meters	6.792	-8	-0.315	6.806	6	0.236
7.0 meters	6.992	-8	-0.315	7.006	6	0.236
NOTE 1: The Statement of Work states: "...ship's baseline is identified...as horizontal plane which passes through the keel knuckle located 11,295 mm (37'-0 11/16") forward of the aft end of the main deck (just aft of Frame 82)." Draft marks were measured from ship's baseline to bottom of draft mark on ship's hull. Ship's keel rakes upward from the point where baseline passes through the keel knuckle. Because of this, ship's draft marks do not indicate true depth to keel (i.e., navigational draft) with the difference being greatest at the bow. At Frame 5, the difference between the keel and baseline is 1314mm (4' 3 3/4"). It is also noted that the keel does not rake						
NOTE 2: *In this area of of the hull, laser scan density was sparse making exact measurements difficult. (See Photo No. 3 in Enclosure (4).) However, based on a vertical measurement grid superimposed over the laser scan point cloud and indexed to an accurate draft mark						
NOTE 3: Due to drydock sidewall distance-to-hull constriants, midship draft mark heights were extrapolated based on the first three draft marks. (See Photo No. 4 in Enclosure (4) and						

NOAA SHIP OSCAR DYSON
SOW Paragraph 1
Vertical Location of Draft Marks in Meters Above Baseline
Frame 99 Draft Marks

Draft Mark Measurements Vertical Height Above the Baseline in Meters						
Draft Mark Marking	Frame 99					
	Port Measurement (m)	Difference (mm)	Difference (in)	Stbd Measurement (m)	Difference (mm)	Difference (in)
5.8 meters	5.770	-30	-1.181	5.756	-44	-1.732
6.0 meters	5.975	-25	-0.984	5.978	-22	-0.866
6.2 meters	6.178	-22	-0.866	6.189	-11	-0.433
6.4 meters	6.387	-13	-0.512	6.406	6	0.236
6.6 meters	6.593	-7	-0.276	6.610	10	0.394
6.8 meters	6.795	-5	-0.197	6.809	9	0.354
7.0 meters	6.997	-3	-0.118	7.005	5	0.197

NOTE 1: The Statement of Work states: "...ship's baseline is identified...as horizontal plane which passes through the keel knuckle located 11,295 mm (37'-0 11/16") forward of the aft end of the main deck (just aft of Frame 82)." Draft marks were measured from ship's baseline to bottom of draft mark on ship's hull. Ship's keel rakes upward from the point where baseline passes through the keel knuckle. Because of this, ship's draft marks do not indicate true depth to keel (i.e., navigational draft) with the difference being greatest at the bow. At Frame 5, the difference between the keel and baseline is 1314mm (4' 3 3/4"). It is also noted that the keel does not rake

NOTE 2: *In this area of of the hull, laser scan density was sparse making exact measurements difficult. (See Photo No. 3 in Enclosure (4).) However, based on a vertical measurement grid superimposed over the laser scan point cloud and indexed to an accurate draft mark

NOTE 3: Due to drydock sidewall distance-to-hull constriants, midship draft mark heights were extrapolated based on the first three draft marks. (See Photo No. 4 in Enclosure (4) and

NOAA SHIP OSCAR DYSON
SOW Paragraph 2
Vertical Location of Centerboard Projection Draft Marks in Meters Above Baseline
Frame 40 Centerboard Draft Marks

Draft Mark Measurements Vertical Height Above the Baseline in Meters (Note: The bottom of the centerboard in 3.15 m below baseline when extended)						
Centerboard Projection Draft Mark Marking	Frame 40					
	Port Measurement (m)	Difference (mm)	Difference (in)	Stbd Measurement (m)	Difference (mm)	Difference (in)
6.0 meters	2.950	100	3.937	2.950	100	3.937
6.2 meters	3.156	106	4.173	3.153	103	4.055
6.4 meters	3.352	102	4.016	3.350	100	3.937
6.6 meters	3.550	100	3.937	3.542	92	3.622
6.8 meters	3.745	95	3.740	3.735	85	3.346
7.0 meters	3.938	88	3.465	3.938	88	3.465
7.2 meters	4.138	88	3.465	4.128	78	3.071
7.4 meters	4.338	88	3.465	4.328	78	3.071
7.6 meters	4.538	88	3.465	4.528	78	3.071
7.8 meters	4.738	88	3.465	4.728	78	3.071
8.0 meters	4.938	88	3.465	4.928	78	3.071
8.2 meters	5.138	88	3.465	5.128	78	3.071
8.4 meters	5.338	88	3.465	5.328	78	3.071
8.6 meters	5.538	88	3.465	5.528	78	3.071
8.8 meters	5.738	88	3.465	5.728	78	3.071
9.0 meters	5.938	88	3.465	5.928	78	3.071
9.2 meters	6.138	88	3.465	6.128	78	3.071
9.4 meters	6.338	88	3.465	6.328	78	3.071
9.6 meters	6.538	88	3.465	6.528	78	3.071
9.8 meters	6.738	88	3.465	6.728	78	3.071
10.0 meters	6.938	88	3.465	6.928	78	3.071

NOTE 1: It should be noted that the above draft mark measurements were made to the baseline of the ship. The ship's centerboard projection draft marks indicate the depth to the bottom of the centerboard when fully extended. The draft mark measurements, above, are the vertical distance from the baseline to the bottom edge of the draft mark.

NOTE 2: Due to drydock sidewall distance to hull constriants, the shaded midship draft mark heights were extrapolated based on the accurately measured draft marks. (See Photo No. 3 in Enclosure (4) and the discussion in Enclosure (3).)